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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/043,202 | 01/14/2002 | Kay Rokman | 3952-50 | 7372 |
| 23117 | 7590 | 01/02/2004 | EXAMINER | |
| NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714 | | | SALVATORE, LYNDIA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1771 | |

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,202

Applicant(s)

ROKMAN ET AL.

Examiner

Lynda M Salvatore

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28, 29 and 41-62 is/are pending in the application.
- 4a) Of the above claim(s) 28 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 41-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 28-30 and 41-62 filed October 17th, 2003 is acknowledged. Claims 1-27, 31-40 have been canceled as requested.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 28-30, 41-45, 50 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannes et al., US 4,112,174 in view of Fletemier et al., US 6,156,682.

The patent issued to Hannes et al., is directed to the economical formation of a uniform fibrous glass mat comprising monofilament glass fibers and elongated glass fiber bundles (Column 3, 10-14). Hannes et al., teaches coating the fiber bundles with a liquid insoluble binder to keep the fiber bundles together (Column 4, 40-45). The diameter of the glass fibers is preferably between 12 and 19 microns and the number of filaments per bundle is preferably between 20 and 300 (Column 4, 20-21 and 39-41). Hannes et al., teaches that there is no absolute limitation to the length of the fiber bundles, but that bundles below 15mm do not have sufficient reinforcement functionality. Instead, Hannes et al., suggests using fibers bundles with a length between 65 and 75mm (Column 4, 46-55). The content of fiber bundles present in the mat can range from 5% up to as much as 90% (Column 4, 60-65). The fibrous glass mat is

suitable for use in various building applications (Abstract) Hannes et al., teaches that the fibrous glass mat possesses improved tear strength

The patent issued to Hannes et al., fails to teach a composite, however, the patent issued to Fletemier et al., teaches a composite material suitable for use in a variety of applications such as structural and acoustical panels (Abstract). The composite taught by Fletemier et al., comprises a core layer made from thermoplastic fibers, or recycled fibers (Column 3, 42-67), and at least two reinforcing layers comprising glass fibers chopped from rovings (Column 4, 5-15 and Figure 1).

Therefore, motivated by the improved tear strength, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the uniform fibrous glass mat of Hannes et al., in the formation of the composite taught by Fletemier et al. Though, Hannes et al., does not specifically teach employing the uniform fibrous glass mat in the applications disclosed by Fletemier et al., it is the position of the Examiner that it is commonly known in the art that glass fibrous mats enjoy a variety of applications such as those taught by Fletemier et al., and that the absence of such an explicit teaching does not preclude Hannes et al., from being relied upon.

With regard to the specific insoluble binder/sizing used to hold the fiber bundles together, Hannes et al., fails to teach the claimed epoxy resin or PVOH (polyvinyl alcohol), however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select an epoxy resin or polyvinyl alcohol since these substances are known to have insolubility properties in water. It has been held to be within the general skill of a worker in the

art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416

4. Claims 46,48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannes et al., US 4,112,174 in view of Fletemier et al., US 6,156,682as applied to claim 41 above and further in view of Helwig et al., US 6,054,022.

Hannes et al., and Fletemier et al., fail to teach the density of the non-woven mat, however the patent issued to Helwig et al., teaches a method for forming a non-woven glass fiber mat comprising bundles of chopped fibers (Abstract). Helwig et al., teaches that the chopped glass fibers have a lengths which can range from 3mm to 50mm and that the size of each bundle contains 50-500 fibers (Column 2, lines 60-67). Helwig et al., discloses that the basis weight range of the non-woven glass mat is from about 40g/m^2 to 500g/m^2 (Column 3, lines 5-7).

Therefore, motivated to provide a lightweight glass reinforced composite it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Helwig et al., and optimize the density of the glass fiber mat of Hannes et al., in the composite of Fletemier et al.

5. Claims 51-59,61, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannes et al., US 4,112,174 in view of Jaffee et al., US 6,187,697.

The patent issued to Hannes et al., is directed to the economical formation of a uniform fibrous glass mat comprising monofilament glass fibers and elongated glass fiber bundles (Column 3, 10-14). Hannes et al., teaches coating the fiber bundles with a liquid insoluble binder to keep the fiber bundles together (Column 4, 40-45). The diameter of the glass fibers is preferably between 12 and 19 microns and the number of filaments per bundle is preferably

between 20 and 300 (Column 4, 20-21 and 39-41). Hannes et al., teaches that there is no absolute limitation to the length of the fiber bundles, but that bundles below 15mm do not have sufficient reinforcement functionality. Instead, Hannes et al., suggests using fibers bundles with a length between 65 and 75mm (Column 4, 46-55). The content of fiber bundles present in the mat can range from 5% up to as much as 90% (Column 4, 60-65). The fibrous glass mat is suitable for use in various building applications (Abstract) Hannes et al., teaches that the fibrous glass mat possesses improved tear strength.

Hannes et al., fails to teach a non-woven mat having at least two layers, which exhibit different physical or chemical properties, however, the patent issued to Jaffee et al., teaches a multi-layer fibrous non-woven mat having a body portion and a surface portion (Abstract). Jaffee et al., teaches that the surface portion of the mat has a substantially lower permeability or pore size or both than the body or major portion of the fibrous non-woven mat (Column 2, 50-55). The body portion of the fibrous non-woven mat comprises 80-99.5 wt. percent of glass fibers and the surface of portion of the two layered mat may comprise from .5 –20 wt. percent of other fibers and/or particles made from polyolefins, thermoplastics, nylon, glass beads, clay, mica, flake glass, microfibers, mineral or wool (Column 5, 18-Column 6, 5). Jaffee et al., further teaches bonding this composite mat to gypsum board (Column 7, 1-10). The reinforcing non-woven mats are suitable for use as a facer for all types of boards such as wood, insulating and hard boards as well as for use in reinforcement applications where dimensional stability is desired (Abstract). Specifically, Jaffee et al., discloses that it is known to make reinforcing non-woven mats from glass fibers and to use these mats as substrates in the manufacture of roofing and other products (Column 3, 17-20).

Therefore, motivated by the economical manufacturing benefits and improved tear strength, it would have been obvious to one having ordinary skill in the art to form the body portion of the two-layered non-woven mat taught by Jaffee et al., with the fibrous glass mat taught by Hannes et al.

With regard to the foam process limitations present in claims 51 and 52, said process limitations are not given patentable weight at this time since they are not shown to materially effect the final product structure. The burden is shifted to the Applicant to evidence the contrary.

With regard to the specific insoluble binder/sizing used to hold the fiber bundles together, Hannes et al., fails to teach the claimed epoxy resin or PVOH (polyvinyl alcohol), however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select an epoxy resin or polyvinyl alcohol since these substances are known to have insolubility properties in water. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416

6. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hannes et al., US 4,112,174 in view of Jaffee et al., US 6,187,697 as applied to claim 51 above and further in view of Helwig et al., US 6,054,022.

Hannes et al., and Jaffee et al., fail to teach the density of the non-woven mat, however the patent issued to Helwig et al., teaches a method for forming a non-woven glass fiber mat comprising bundles of chopped fibers (Abstract). Helwig et al., teaches that the chopped glass fibers have a lengths which can range from 3mm to 50mm and that the size of each bundle

contains 50-500 fibers (Column 2, lines 60-67). Helwig et al., discloses that the basis weight range of the non-woven glass mat is from about 40g/m^2 to 500g/m^2 (Column 3, lines 5-7).

Therefore, motivated to provide a lightweight glass reinforced composite it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Helwig et al., and optimize the density of the glass fiber mat of Hannes et al., in the composite of Jaffee et al.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynda M Salvatore whose telephone number is 703-305-4070.


The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

December 8, 2003

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TERREL MORRIS
SUPERVISORY PATENT EXAMINER
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